इंटरनेट मानक

Disclosure to Promote the Right To Information

Whereas the Parliament of India has set out to provide a practical regime of right to information for citizens to secure access to information under the control of public authorities, in order to promote transparency and accountability in the working of every public authority, and whereas the attached publication of the Bureau of Indian Standards is of particular interest to the public, particularly disadvantaged communities and those engaged in the pursuit of education and knowledge, the attached public safety standard is made available to promote the timely dissemination of this information in an accurate manner to the public.

"जानने का अधिकार, जीने का अधिकार"
Mazdoor Kisan Shakti Sangathan
"The Right to Information, The Right to Live"

"पुराने को छोड नये के तरफ"
Jawaharlal Nehru
"Step Out From the Old to the New"

IS 1072 (1996): Leaf chains, clevises and sheaves [PGD 31: Bolts, Nuts and Fasteners Accessories]

"ज्ञान से एक नये भारत का निर्माण"
Satyanarayan Gangaram Pitroda
"Invent a New India Using Knowledge"

Act Number 22 of 2005
The Indian Parliament
RIGHT TO INFORMATION

Made Available By
Public.Resource.Org

"ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है"
Bhartṛhari—Nītiśatakam
"Knowledge is such a treasure which cannot be stolen"

BLANK PAGE

BRUTUM FULMEN

IGNORANTIA
JURIS
NON EXCUSAT

PROTECTED BY COPYRIGHT

IS 1072 : 1996
ISO 4347 : 1992

(Reaffirmed 2006)

भारतीय मानक

पत्ती जंजीरें कलेविस और चक्रिकाएं

(दूसरा पुनरीक्षण)

Indian Standard

LEAF CHAIN, CLEVISES AND SHEAVES

(Second Revision)

ICS 21.220.30

© BIS 1996

BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

October 1996

Price Group 7

Transmission Devices Sectional Committee, LM 10

NATIONAL FOREWORD

This Indian Standard (Second Revision) which is identical with ISO 4347 : 1992 'Leaf chains, clevises and sheaves', issued by International Organization for Standardization (ISO) was adopted by the Bureau of Indian Standards on the recommendation of the Transmission Devices Sectional Committee (LM 10) and approval of Light Mechanical Engineering Division Council.

This standard was originally published in 1967 and was subsequently revised in 1980. The present revision, in addition to 'LL' series of chains corresponding to ISO 606 series B covered earlier — incorporates one more series of chains designated by 'LH' corresponding to ISO 606 series A of chains (see IS 2403 : 1991/ISO 606 : 1982) 'Short pitch transmission precision steel roller chains and chain wheels (*second revision*)' (presently under revision). The requirements of clevises for use with 'LH' chains have also been included.

In this adopted standard certain terminology and conventions are, however, not identical to those used in Indian Standards. Attention is particularly drawn to the following:

a) Wherever the words 'International Standard' appear referring to this standard, they should be read as 'Indian Standard'.

b) Comma (,) has been used as a decimal marker while in Indian Standards the current practice is to use a point (.) as a decimal marker.

In this adopted standard, reference appears to certain International Standards for which Indian Standards also exist. The corresponding Indian Standards which are to be substituted in their place are listed below along with their degree of equivalence for the editions indicated:

International Standard	*Corresponding Indian Standard*	*Degree of Equivalence*
ISO 286-2 : 1988	IS 919 (Part 2) : 1993 ISO systems of limits and fits: Part 2 Tables of standard tolerance scales and limit deviations for holes and shafts (*first revision*)	Identical
ISO 606 : 1982	IS 2403 : 1991 Short pitch transmission precision steel roller chains and chain wheels (*second revision*)	Identical

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

The product may also be marked with the Standard Mark.

The use of the Standard Mark is governed by the provisions of the *Bureau of Indian Standards Act*, 1986 and the Rules and Regulations made thereunder. The details of conditions under which the licence for the use of Standard Mark may be granted to manufacturers or producers may be obtained from the Bureau of Indian Standards.

Indian Standard

LEAF CHAIN, CLEVISES AND SHEAVES

(Second Revision)

1 Scope

This International Standard specifies characteristics of chains used for general lifting purposes, together with the rim profiles of sheaves and the chain attachment ends of clevises. It covers dimensions, limits for interchangeability, length measurement, proof testing and minimum tensile strengths.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 286-2:1988, *ISO system of limits and fits — Part 2: Tables of standard tolerance grades and limit deviations for holes and shafts.*

ISO 606:—[1], *Short-pitch transmission precision roller chains and chain wheels.*

3 Chains

3.1 Nomenclature

The nomenclature of chains is indicated in figure 1 and tables 1 and 2; the figure does not necessarily define the actual form of the chain plates.

3.2 Chain designation

Leaf chains shall be designated by the same numerical components, taken from the standardized ISO chain number, as laid down in ISO 606 for chains with the same pitch: i.e. two digits expressing the pitch in sixteenths of an inch, preceded by the prefix LH for chains from the ISO 606 series A, and LL for chains from ISO 606 series B; followed by the two numbers indicating the number of plates on pin links and articulating links, respectively.

EXAMPLES

The designation of a chain with nominal pitch of 12,7 mm derived from chain 08B, consisting of pin links and articulating links, each including two plates is as follows:

LL 0822

The designation of a chain with nominal pitch of 19,05 mm, consisting of pin links including three plates and articulating links including four plates is as follows:

LH 1234

3.3 Dimensions

Chains shall conform to the dimensions given in tables 1 and 2. Maximum and minimum dimensions are specified to ensure interchangeability of complete chains in clevises. They represent limits for interchangeability, but are not the actual tolerances that should be used in manufacture.

NOTE 1 Chains from different manufacturers should not be placed together within the same application.

3.4 Tensile testing

3.4.1 The minimum tensile strength is that value which shall be exceeded when a tensile force is applied to a sample which is tested to destruction, as defined in 3.4.2. This strength is not a working load. It is intended primarily as a comparative figure between chains of various constructions. For application information, the manufacturers or their published data should be consulted.

---

[1] To be published. (Revision of ISO 606:1982)

3.4.2 A tensile force, not less than that specified in table 1, shall be applied slowly to the ends of a chain length, containing at least five free pitches, by means of shackles permitting free movement on both sides of the chain centreline, in the normal plane of articulation.

Failure shall be considered to have occurred at the first point where increasing extension is no longer accompanied by increasing force, i.e. the summit of the force/extension diagram.

Tests in which failures occur adjacent to the shackles shall be disregarded.

3.4.3 The tensile test shall be considered as a destructive test. Even though a chain may not visibly fail when subjected to a force equivalent to the minimum tensile strength, it will have been stressed beyond the yield point and will be unfit for service.

3.5 Proof testing

All chains shall be proof tested by applying a tensile force equivalent to at least one-third of the minimum tensile strength given in table 1.

3.6 Length accuracy

As LL leaf chains are normally constructed from plates also used for short-pitch transmission roller chains, the actual pitch of the chain does not necessarily equal its nominal pitch but depends upon each manufacturer. For the specific chain length, consult the manufacturer.

Finished chains shall be measured after proof testing but before lubricating.

The standard measurement length for a chain shall be 49 pitches or 1 524 mm, whichever is the smaller, and the chain shall terminate with an identical link at each end.

The chain shall be supported throughout its entire length and a measuring force equal to 1/100 of the minimum tensile force given in table 1 shall be applied.

The measured length shall be the manufacturer's specified design length, subject to a tolerance of ± 0,25 %.

3.7 Cranked links

Cranked links shall not be used in leaf chains.

3.8 Marking

The chains shall be marked with

a) the manufacturer's name or trade mark;

b) the ISO chain number as given in table 1.

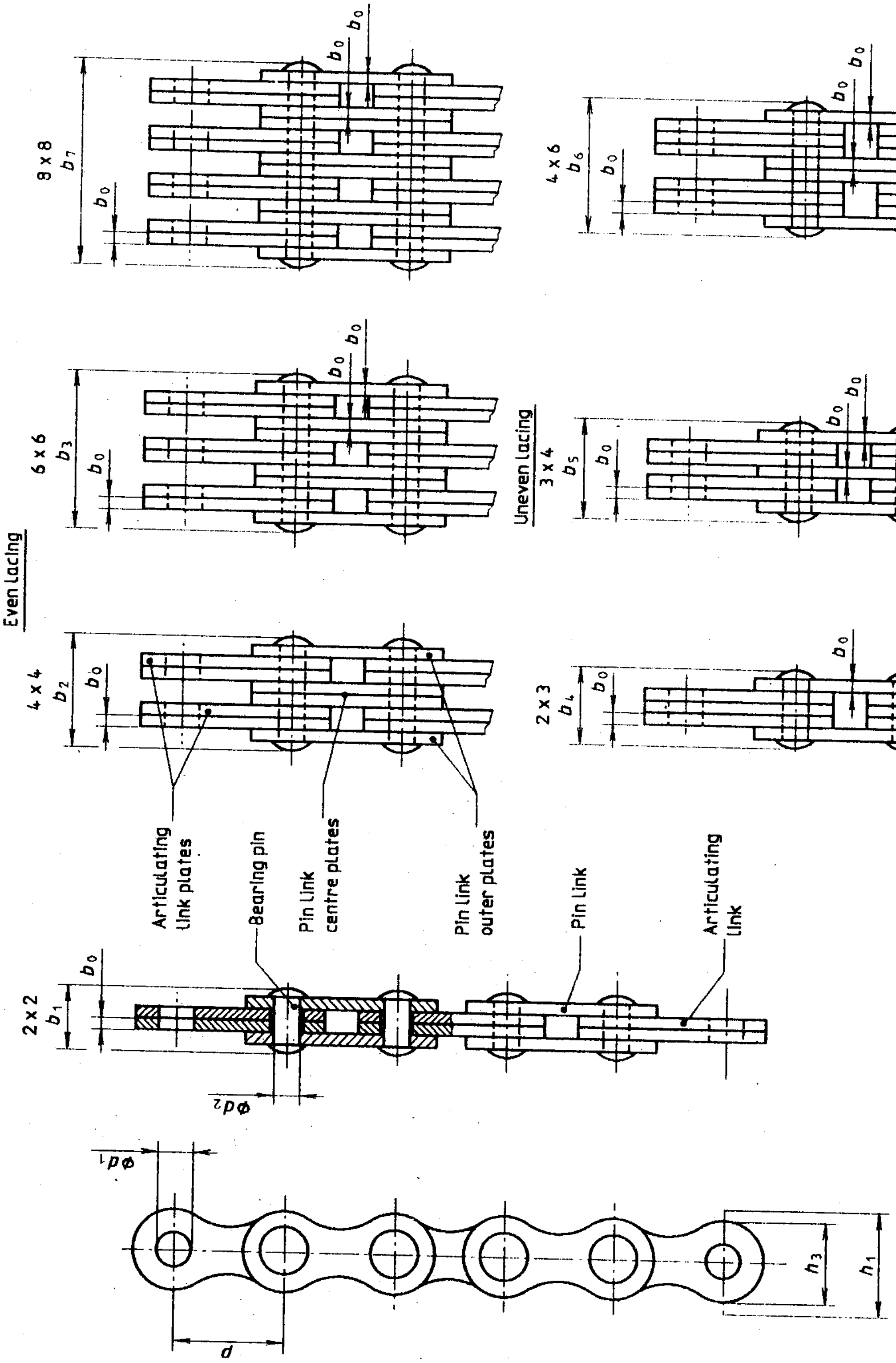

Figure 1 — Symbols related to tables 1 and 2, and to tables A.1 and A.2

Table 1 — Principal chain dimensions and minimum tensile strengths, LH series

ISO chain number	Pitch p nom.	Lacing	Thickness of plates b_0 max.	Hole diameter of articulating link plates d_1 min.	Bearing pin diameter d_2 max.	Chain path depth[1] h_1 min.	Plate depth h_3 max.	Width over riveted bearing pins b_1 to b_7 max.	Tensile strength min.
	mm		mm						kN
LH 0822[2]	12,7	2 × 2	2,08	5,12	5,09	12,32	12,07	11,05	22,2
LH 0823		2 × 3						13,16	22,2
LH 0834		3 × 4						17,4	33,4
LH 0844[2]		4 × 4						19,51	44,5
LH 0846		4 × 6						23,75	44,5
LH 0866[2]		6 × 6						27,99	66,7
LH 0888[2]		8 × 8						36,45	89
LH 1022[2]	15,875	2 × 2	2,44	5,98	5,96	15,34	15,09	12,9	33,4
LH 1023		2 × 3						15,37	33,4
LH 1034		3 × 4						20,32	48,9
LH 1044[2]		4 × 4						22,78	66,7
LH 1046		4 × 6						27,74	66,7
LH 1066[2]		6 × 6						32,69	100,1
LH 1088[2]		8 × 8						42,57	133,4
LH 1222[2]	19,05	2 × 2	3,3	7,96	7,94	18,34	18,11	17,37	48,9
LH 1223		2 × 3						20,73	48,9
LH 1234		3 × 4						27,43	75,6
LH 1244[2]		4 × 4						30,78	97,9
LH 1246		4 × 6						37,49	97,9
LH 1266[2]		6 × 6						44,2	146,8
LH 1288[2]		8 × 8						57,61	195,7
LH 1622[2]	25,4	2 × 2	4,09	9,56	9,54	24,38	24,13	21,34	84,5
LH 1623		2 × 3						25,48	84,5
LH 1634		3 × 4						33,76	129
LH 1644[2]		4 × 4						37,9	169
LH 1646		4 × 6						46,18	169
LH 1666[2]		6 × 6						54,46	253,6
LH 1688[2]		8 × 8						71,02	338,1
LH 2022[2]	31,75	2 × 2	4,9	11,14	11,11	30,48	30,18	25,37	115,6
LH 2023		2 × 3						30,33	115,6
LH 2034		3 × 4						40,23	182,4
LH 2044[2]		4 × 4						45,19	231,3
LH 2046		4 × 6						55,09	231,3
LH 2066[2]		6 × 6						65	347
LH 2088[2]		8 × 8						84,81	462,6
LH 2422[2]	38,1	2 × 2	5,77	12,74	12,71	36,55	36,2	29,62	151,2
LH 2423		2 × 3						35,43	151,2
LH 2434		3 × 4						47,07	244,6
LH 2444[2]		4 × 4						52,88	302,5
LH 2446		4 × 6						64,52	302,5
LH 2466[2]		6 × 6						76,15	453,7
LH 2488[2]		8 × 8						99,42	605

ISO chain number	Pitch p nom.	Lacing	Thickness of plates b_0 max.	Hole diameter of articulating link plates d_1 min.	Bearing pin diameter d_2 max.	Chain path depth 1) h_1 min.	Plate depth h_3 max.	Width over riveted bearing pins b_1 to b_7 max.	Tensile strength min.
	mm		mm						kN
LH 2822 2)	44,45	2 × 2	6.55	14.31	14,29	42,67	42,24	33,55	191.3
LH 2823		2 × 3						40.16	191,3
LH 2834		3 × 4						53,37	315,8
LH 2844 2)		4 × 4						59,97	382.6
LH 2846		4 × 6						73.18	382,6
LH 2866 2)		6 × 6						86,39	578,3
LH 2888 2)		8 × 8						112.8	765,1
LH 3222 2)	50,8	2 × 2	7,52	17,49	17.46	48,74	48,26	39,01	289,1
LH 3223		2 × 3						46.58	289,1
LH 3234		3 × 4						61,72	440,4
LH 3244 2)		4 × 4						69,29	578,3
LH 3246		4 × 6						84,43	578,3
LH 3266 2)		6 × 6						99,57	857,4
LH 3288 2)		8 × 8						129.84	1 156.5
LH 4022 2)	63,5	2 × 2	9,91	23,84	23,81	60,88	60,33	51,74	433,7
LH 4023		2 × 3						61,7	433,7
LH 4034		3 × 4						81,61	649,4
LH 4044 2)		4 × 4						91,57	867,4
LH 4046		4 × 6						111,48	867,4
LH 4066 2)		6 × 6						131,39	1 301,1
LH 4088 2)		8 × 8						171.22	1 734,8

1) Chain path depth is the minimum depth of channel through which the assembled chain will pass.

2) These chains have reduced fatigue strength and wear life compared with uneven lacings of the same pitch and same minimum tensile strength. This should be taken into account when selecting a chain for a particular application.

Table 2 — Principal chain dimensions and minimum tensile strengths, LL series

ISO chain number	Pitch	Lacing	Thickness of plates	Hole diameter of articulating link plates	Bearing pin diameter	Chain path depth[1]	Plate depth	Width over riveted bearing pins	Tensile strength
	p		b_0	d_1	d_2	h_1	h_3	b_1, b_2, b_3	
	nom.		max.	min.	max.	min.	max.	max	min.
	mm		mm						kN
LL 0822	12,7	2 × 2	1,3	4.46	4.45	11.18	10.92	7,6	17,8
LL 0844		4 × 4						13	31,1
LL 0866		6 × 6						18,4	44,5
LL 1022	15,875	2 × 2	1,65	5,09	5,08	13,98	13,72	9,3	22,2
LL 1044		4 × 4						16.1	44,5
LL 1066		6 × 6						22,9	66,7
LL 1222	19,05	2 × 2	1,9	5,73	5,72	16,39	16,13	10,7	28,9
LL 1244		4 × 4						18,5	57.8
LL 1266		6 × 6						26,3	86,7
LL 1622	25,4	2 × 2	3,2	8,3	8,28	21,34	21,08	17,2	58
LL 1644		4 × 4						30,2	116
LL 1666		6 × 6						43,2	174
LL 2022	31,75	2 × 2	3,7	10,21	10,19	26,68	26,42	20,1	95
LL 2044		4 × 4						35,1	190
LL 2066		6 × 6						50,1	285
LL 2422	38,1	2 × 2	5,2	14,65	14,63	33,73	33,4	28,4	170
LL 2444		4 × 4						49,4	340
LL 2466		6 × 6						70.4	510
LL 2822	44,45	2 × 2	6,45	15,92	15,9	37,46	37,08	34	200
LL 2844		4 × 4						60	400
LL 2866		6 × 6						86	600
LL 3222	50,8	2 × 2	6.45	17,83	17,81	42,72	42,29	35	260
LL 3244		4 × 4						61	520
LL 3266		6 × 6						87	780
LL 4022	63,5	2 × 2	8,25	22,91	22,89	53,49	52,96	44,7	360
LL 4044		4 × 4						77,9	780
LL 4066		6 × 6						111,1	1 080
LL 4822	76,2	2 × 2	10,3	29,26	29,24	64,52	63,88	56,1	560
LL 4844		4 × 4						97,4	1 120
LL 4866		6 × 6						138,9	1 168

[1] Chain path depth is the minimum depth of channel through which the assembled chain will pass.

4 Clevises

4.1 Dimensions

The dimensions of terminal clevises for use with LH series and LL series leaf chains shall be as given in tables 3 and 4 and figure 2. Limiting dimensions laid down in these tables are for the purpose of ensuring acceptance of chains built in accordance with the previously published standards.

4.2 Minimum tensile strength

The clevises and the pins used to anchor chains shall withstand at least the same minimum tensile forces as the chains (see 3.4.1 and 3.4.2).

4.3 Length adjustment

In multi-strand applications, where it becomes necessary within the chain assembly to compensate for small length differences between strands, it is always desirable to provide within the anchoring device a length adjustment equal to at least one pitch of the chain.

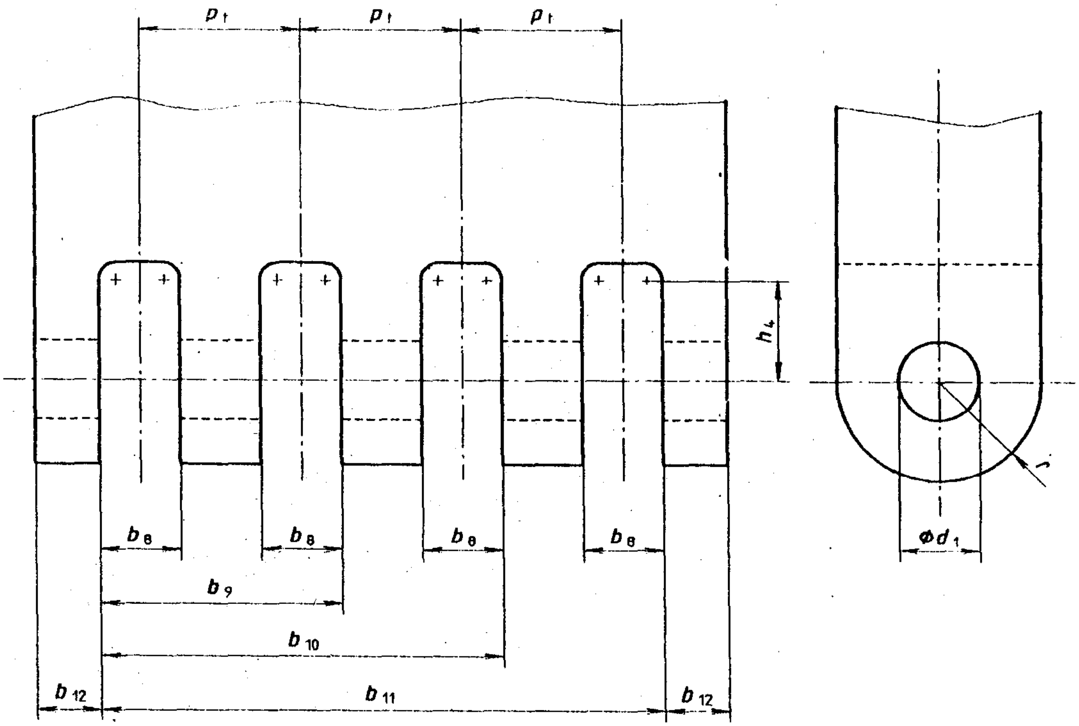

Figure 2 — Dimensions of terminal clevises

Table 3 — Clevis dimensions, LH series

Dimensions in millimetres

ISO chain number	b_8 H11 1)	b_9 H11 1)	b_{10} H11 1)	b_{11} H11 1)	b_{12} min.	p_t nom.	d_1 min.	h_4 min.	r max.
LH 0822	4,34	—	—	—	3,12	—	5,12	6,35	6,35
LH 0823	6,55	—	—	—		—			
LH 0834	4,34	10,69	—	—		6,35			
LH 0844	4,34	12,9	—	—		8,48			
LH 0846	6,55	17,17	—	—		10,62			
LH 0866	4,34	12,9	21,39	—		8,48			
LH 0888	4,34	12,9	21,39	29,87		8,48			
LH 1022	5,16	—	—	—	3,66	—	5,98	7,92	7,92
LH 1023	7,65	—	—	—		—			
LH 1034	5,05	12,5	—	—		7,44			
LH 1044	5,16	15,06	—	—		9,91			
LH 1046	7,65	20,04	—	—		12,4			
LH 1066	5,16	15,06	24,97	—		9,91			
LH 1088	5,16	15,06	24,97	34,87		9,91			
LH 1222	6,96	—	—	—	4,95	—	7,96	9,53	9,53
LH 1223	10,31	—	—	—		—			
LH 1234	6,83	16,89	—	—		10,06			
LH 1244	6,96	20,37	—	—		13,41			
LH 1246	10,31	27,08	—	—		16,76			
LH 1266	6,96	20,37	33,78	—		13,41			
LH 1288	6,96	20,37	33,78	47,19		13,41			
LH 1622	8,59	—	—	—	6,13	—	9,56	12,7	12,7
LH 1623	12,73	—	—	—		—			
LH 1634	8,43	20,85	—	—		12,42			
LH 1644	8,59	25,15	—	—		16,56			
LH 1646	12,73	33,43	—	—		20,7			
LH 1666	8,59	25,15	41,71	—		16,56			
LH 1688	8,59	25,15	41,71	58,27		16,56			
LH 2022	10,26	—	—	—	7,35	—	11,14	15,88	15,88
LH 2023	15,21	—	—	—		—			
LH 2034	10,08	24,94	—	—		14,86			
LH 2044	10,26	30,07	—	—		19,81			
LH 2046	15,21	39,98	—	—		24,77			
LH 2066	10,26	30,07	49,89	—		19,81			
LH 2088	10,26	30,07	49,89	69,7		19,81			
LH 2422	12,04	—	—	—	8,66	—	12,74	19,05	19,05
LH 2423	17,86	—	—	—		—			
LH 2434	11,84	29,29	—	—		17,45			
LH 2444	12,04	35,31	—	—		23,27			
LH 2446	17,86	46,94	—	—		29,08			
LH 2466	12,04	35,31	58,58	—		23,27			
LH 2488	12,04	35,31	58,58	81,85		23,27			
LH 2822	13,67	—	—	—	9,82	—	14,31	22,23	22,23
LH 2823	20,27	—	—	—		—			
LH 2834	13,44	33,25	—	—		19,81			
LH 2844	13,67	40,08	—	—		26,42			
LH 2846	20,27	53,29	—	—		33,09			
LH 2866	13,67	40,08	66,5	—		26,42			
LH 2888	13,67	40,08	66,5	92,91		26,42			

ISO chain number	b_8 H11[1]	b_9 H11[1]	b_{10} H11[1]	b_{11} H11[1]	b_{12} min.	p_t nom.	d_1 min.	h_4 min.	r max.
LH 3222	15,65				11,28		17,49	25,4	25,4
LH 3223	23,22								
LH 3234	15,39	38,1				22,71			
LH 3244	15,65	45,92				30,28			
LH 3246	23,22	61,06				37,85			
LH 3266	15,65	45,92	76,2			30,28			
LH 3288	15,65	45,92	76,2	106,48		30,28			
LH 4022	20,52				14,86		23,84	31,75	31,75
LH 4023	30,48								
LH 4034	20,22	50,09				29,87			
LH 4044	20,52	60,35				39,83			
LH 4046	30,48	80,26				49,78			
LH 4066	20,52	60,35	100,18			39,83			
LH 4088	20,52	60,35	100,18	140,01		39,83			

1) Tolerance H11 is in accordance with ISO 286-2.

Table 4 — Clevis dimensions, LL series

Dimensions in millimetres

ISO chain number	b_8 H11[1]	b_9 H11[1]	b_{10} H11[1]	b_{12} min.	p_t nom.	d_1 min.	h_4 min.	r max.
LL 0822 **LL 0844** **LL 0866**	2,7	8,06	13,42	1,95	5,36	4,46	6	6,35
LL 1022 **LL 1044** **LL 1066**	3,4	10,16	16,92	2,48	6,76	5,09	8	7,92
LL 1222 **LL 1244** **LL 1266**	3,9	11,66	19,42	2,85	7,76	5,73	9	9,52
LL 1622 **LL 1644** **LL 1666**	6,5	19,5	32,5	4,8	13	8,3	12	12,7
LL 2022 **LL 2044** **LL 2066**	7,5	22,5	37,5	5,55	15	10,21	14	15,88
LL 2422 **LL 2444** **LL 2466**	10,5	31,5	52,5	7,8	21	14,65	18	19,05
LL 2822 **LL 2844** **LL 2866**	13	39	65	9,68	26	15,92	20	22,2
LL 3222 **LL 3244** **LL 3266**	13	39	65	9,68	26	17,83	23	25,4
LL 4022 **LL 4044** **LL 4066**	16,6	49,8	83	12,38	33,2	22,91	28	31,75
LL 4822 **LL 4844** **LL 4866**	20,7	62,1	103,5	15,45	41,4	29,26	34	38,1

1) Tolerance H11 is in accordance with ISO 286-2.

5 Sheaves

Sheaves shall comply with the following formulae, as illustrated in figure 3.

a) Minimum sheave diameter:

D_1 min. = 5 × nominal chain pitch

NOTE 2 Smaller diameters may be used if proved by testing.

b) Minimum width between flanges:

b_{13} min. = 1,05 × width over riveted bearing pins

c) Minimum flange diameter:

D_2 min. = $D_1 + h_1 + d_2$

NOTE 3 For dimensions h_1 and d_2 and the width over riveted bearing pins (dimensions b_1 to b_7), see figure 1 and table 1 or 2.

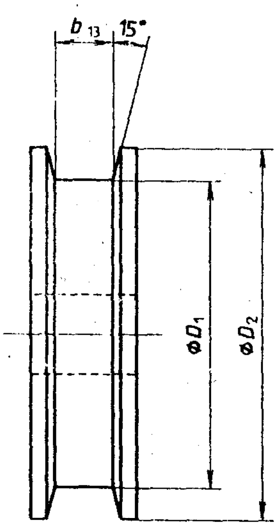

Figure 3 — Rim profile of sheaves

Annex A
(informative)

Original values

Tables A.1 to A.4 record for reference purposes the original inch/lb values from which the metric values given in this International Standard have been derived.

Table A.1 relates to table 1, table A.2 relates to table 2, table A.3 relates to table 3 and table A.4 relates to table 4.

Table A.1 — Principal chain dimensions and minimum tensile strengths, LH series

ISO chain number	Pitch p nom.	Lacing	Thickness of plates b_0 max.	Hole diameter of articulating link plates d_1 min.	Bearing pin diameter d_2 max.	Chain path depth[1] h_1 min.	Plate depth h_3 max.	Width over riveted bearing pins b_1 to b_7 max.	Tensile strength min.
	in		in						lbf
LH 0822[2]	0,5	2 × 2	0,082	0,201 6	0,200 4	0,485	0,475	0,435	5 000
LH 0823		2 × 3						0,518	5 000
LH 0834		3 × 4						0,685	7 500
LH 0844[2]		4 × 4						0,768	10 000
LH 0846		4 × 6						0,935	10 000
LH 0866[2]		6 × 6						1,102	15 000
LH 0888[2]		8 × 8						1,435	20 000
LH 1022[2]	0,625	2 × 2	0,096	0,235 4	0,234 6	0,604	0,594	0,508	7 500
LH 1023		2 × 3						0,605	7 500
LH 1034		3 × 4						0,8	11 000
LH 1044[2]		4 × 4						0,897	15 000
LH 1046		4 × 6						1,092	15 000
LH 1066[2]		6 × 6						1,287	22 500
LH 1088[2]		8 × 8						1,676	30 000
LH 1222[2]	0,75	2 × 2	0,13	0,313 4	0,312 6	0,722	0,713	0,684	11 000
LH 1223		2 × 3						0,816	11 000
LH 1234		3 × 4						1,08	17 000
LH 1244[2]		4 × 4						1,212	22 000
LH 1246		4 × 6						1,476	22 000
LH 1266[2]		6 × 6						1,74	33 000
LH 1288[2]		8 × 8						2,268	44 000
LH 1622[2]	1	2 × 2	0,161	0,376 4	0,375 6	0,96	0,95	0,84	19 000
LH 1623		2 × 3						1,003	19 000
LH 1634		3 × 4						1,329	29 000
LH 1644[2]		4 × 4						1,492	38 000
LH 1646		4 × 6						1,818	38 000
LH 1666[2]		6 × 6						2,144	57 000
LH 1688[2]		8 × 8						2,796	76 000
LH 2022[2]	1,25	2 × 2	0,193	0,438 6	0,437 4	1,2	1,188	0,999	26 000
LH 2023		2 × 3						1,194	26 000
LH 2034		3 × 4						1,584	41 000
LH 2044[2]		4 × 4						1,779	52 000
LH 2046		4 × 6						2,169	52 000
LH 2066[2]		6 × 6						2,559	78 000
LH 2088[2]		8 × 8						3,339	104 000

ISO chain number	Pitch p nom.	Lacing	Thickness of plates b_0 max.	Hole diameter of articulating link plates d_1 min.	Bearing pin diameter d_2 max.	Chain path depth[1] h_1 min.	Plate depth h_3 max.	Width over riveted bearing pins b_1 to b_7 max.	Tensile strength min.
	in		in						lbf
LH 2422[2]	1,5	2 × 2	0,227	0,501 6	0,500 4	1,439	1,425	1,166	34 000
LH 2423		2 × 3						1,395	34 000
LH 2434		3 × 4						1,853	55 000
LH 2444[2]		4 × 4						2,082	68 000
LH 2446		4 × 6						2,54	68 000
LH 2466[2]		6 × 6						2,998	102 000
LH 2488[2]		8 × 8						3,914	136 000
LH 2822[2]	1,75	2 × 2	0,258	0,563 4	0,562 6	1,68	1,663	1,321	43 000
LH 2823		2 × 3						1,581	43 000
LH 2834		3 × 4						2,101	71 000
LH 2844[2]		4 × 4						2,361	86 000
LH 2846		4 × 6						2,881	86 000
LH 2866[2]		6 × 6						3,401	130 000
LH 2888[2]		8 × 8						4,441	172 000
LH 3222[2]	2	2 × 2	0,296	0,688 6	0,687 4	1,919	1,9	1,536	65 000
LH 3223		2 × 3						1,834	65 000
LH 3234		3 × 4						2,43	99 000
LH 3244[2]		4 × 4						2,728	130 000
LH 3246		4 × 6						3,324	130 000
LH 3266[2]		6 × 6						3,92	195 000
LH 3288[2]		8 × 8						5,112	260 000
LH 4022[2]	2,5	2 × 2	0,39	0,938 6	0,937 4	2,397	2,375	2,037	97 500
LH 4023		2 × 3						2,429	97 500
LH 4034		3 × 4						3,213	146 000
LH 4044[2]		4 × 4						3,605	195 000
LH 4046		4 × 6						4,389	195 000
LH 4066[2]		6 × 6						5,173	292 500
LH 4088[2]		8 × 8						6,741	390 000

1) Chain path depth is the minimum depth of channel through which the assembled chain will pass.

2) These chains have reduced fatigue strength and wear life compared with uneven lacings of the same pitch and same minimum tensile strength. This should be taken into account when selecting a chain for a particular application.

Table A.2 — Principal chain dimensions and minimum tensile strengths, LL series

ISO chain number	Pitch p nom.	Lacing	Thickness of plates b_0 max.	Hole diameter of articulating link plates d_1 min.	Bearing pin diameter d_2 max.	Chain path depth[1)] h_1 min.	Plate depth h_3 max.	Width over riveted bearing pins b_1, b_2, b_3 max.	Tensile strength min.
	in		in						lbf
LL 0822 LL 0844 LL 0866	0,5	2 × 2 4 × 4 6 × 6	0,051	0,175 5	0,175	0,44	0,43	0,3 0,51 0,725	4 000 7 000 10 000
LL 1022 LL 1044 LL 1066	0,625	2 × 2 4 × 4 6 × 6	0,065	0,200 5	0,2	0,55	0,54	0,365 0,635 0,9	5 000 10 000 15 000
LL 1222 LL 1244 LL 1266	0,75	2 × 2 4 × 4 6 × 6	0,075	0,225 5	0,225	0,645	0,635	0,42 0,73 1,035	6 500 13 000 19 500
LL 1622 LL 1644 LL 1666	1	2 × 2 4 × 4 6 × 6	0,126	0,327	0,326	0,84	0,83	0,675 1,19 1,7	9 500 19 000 28 500
LL 2022 LL 2044 LL 2066	1,25	2 × 2 4 × 4 6 × 6	0,146	0,402	0,401	1,05	1,04	0,79 1,38 1,97	14 500 29 000 43 500
LL 2422 LL 2444 LL 2466	1,5	2 × 2 4 × 4 6 × 6	0,205	0,577	0,576	1,328	1,315	1,12 1,945 2,77	22 000 44 000 66 000
LL 2822 LL 2844 LL 2866	1,75	2 × 2 4 × 4 6 × 6	0,254	0,627	0,626	1,475	1,46	1,34 2,36 3,385	29 000 58 000 87 000
LL 3222 LL 3244 LL 3266	2	2 × 2 4 × 4 6 × 6	0,254	0,702	0,701	1,682	1,665	1,38 2,4 3,425	38 000 76 000 114 000
LL 4022 LL 4044 LL 4066	2,5	2 × 2 4 × 4 6 × 6	0,325	0,902	0,901	2,106	2,085	1,76 3,065 4,374	59 000 118 000 177 000
LL 4822 LL 4844 LL 4866	3	2 × 2 4 × 4 6 × 6	0,406	1,152	1,151	2,54	2,515	2,21 3,835 5,47	90 000 180 000 270 000

1) Chain path depth is the minimum depth of channel through which the assembled chain will pass.

Table A.3 — Clevis dimensions, LH series

Dimensions in inches

ISO chain number	b_8	b_9	b_{10}	b_{11}	b_{12}	p_t	d_1	h_4	r
	H11	H11	H11	H11	min.	nom.	min.	min.	max.
LH 0822	0,171	—	—	—	0,123	—	0,201 6	0,25	0,25
LH 0823	0,258	—	—	—		—			
LH 0834	0,171	0,421	—	—		0,25			
LH 0844	0,171	0,508	—	—		0,334			
LH 0846	0,258	0,676	—	—		0,418			
LH 0866	0,171	0,508	0,842	—		0,334			
LH 0888	0,171	0,508	0,842	1,176		0,334			
LH 1022	0,203	—	—	—	0,144	—	0,235 4	0,312	0,312
LH 1023	0,301	—	—	—		—			
LH 1034	0,199	0,492	—	—		0,293			
LH 1044	0,203	0,593	—	—		0,39			
LH 1046	0,301	0,789	—	—		0,488			
LH 1066	0,203	0,593	0,983	—		0,39			
LH 1088	0,203	0,593	0,983	1,373		0,39			
LH 1222	0,274	—	—	—	0,195	—	0,313 4	0,375	0,375
LH 1223	0,406	—	—	—		—			
LH 1234	0,269	0,665	—	—		0,396			
LH 1244	0,274	0,802	—	—		0,528			
LH 1246	0,406	1,066	—	—		0,66			
LH 1266	0,274	0,802	1,33	—		0,528			
LH 1288	0,274	0,802	1,33	1,858		0,528			
LH 1622	0,338	—	—	—	0,242	—	0,376 4	0,5	0,5
LH 1623	0,501	—	—	—		—			
LH 1634	0,332	0,821	—	—		0,489			
LH 1644	0,338	0,99	—	—		0,652			
LH 1646	0,501	1,316	—	—		0,815			
LH 1666	0,338	0,99	1,642	—		0,652			
LH 1688	0,338	0,99	1,642	2,294		0,652			
LH 2022	0,404	—	—	—	0,29	—	0,438 6	0,625	0,625
LH 2023	0,599	—	—	—		—			
LH 2034	0,397	0,982	—	—		0,585			
LH 2044	0,404	1,184	—	—		0,78			
LH 2046	0,599	1,574	—	—		0,975			
LH 2066	0,404	1,184	1,954	—		0,78			
LH 2088	0,404	1,184	1,954	2,744		0,78			
LH 2422	0,474	—	—	—	0,34	—	0,501 6	0,75	0,75
LH 2423	0,703	—	—	—		—			
LH 2434	0,466	1,153	—	—		0,687			
LH 2444	0,474	1,39	—	—		0,916			
LH 2446	0,703	1,848	—	—		1,145			
LH 2466	0,474	1,39	2,306	—		0,916			
LH 2488	0,474	1,39	2,306	3,222		0,916			
LH 2822	0,538	—	—	—	0,387	—	0,563 4	0,875	0,875
LH 2823	0,798	—	—	—		—			
LH 2834	0,529	1,309	—	—		0,78			
LH 2844	0,538	1,578	—	—		1,04			
LH 2846	0,798	2,098	—	—		1,3			
LH 2866	0,538	1,578	2,618	—		1,04			
LH 2888	0,538	1,578	2,618	3,658		1,04			

ISO chain number	b_8 H11	b_9 H11	b_{10} H11	b_{11} H11	b_{12} min.	p_t nom.	d_1 min.	h_4 min.	r max.
LH 3222	0,616	—	—	—	0,444	—	0,688 6	1	1
LH 3223	0,914	—	—	—		—			
LH 3234	0,606	1,5	—	—		0,894			
LH 3244	0,616	1,808	—	—		1,192			
LH 3246	0,914	2,404	—	—		1,49			
LH 3266	0,616	1,808	3	—		1,192			
LH 3288	0,616	1,808	3	4,192		1,192			
LH 4022	0,808	—	—	—	0,585	—	0,938 6	1,25	1,25
LH 4023	1,2	—	—	—		—			
LH 4034	0,796	1,972	—	—		1,176			
LH 4044	0,808	2,376	—	—		1,568			
LH 4046	1,2	3,16	—	—		1,96			
LH 4066	0,808	2,376	3,944	—		1,568			
LH 4088	0,808	2,376	3,944	5,512		1,568			

Table A.4 — Clevis dimensions, LL series

Dimensions in inches

ISO chain number	b_8 H11	b_9 H11	b_{10} H11	b_{12} min.	p_t nom.	d_1 min.	h_4 min.	r max.
LL 0822 **LL 0844** **LL 0866**	0,106	0,317	0,528	0,076	0,211	0,175 5	0,236	0,25
LL 1022 **LL 1044** **LL 1066**	0,134	0,4	0,666	0,098	0,266	0,200 5	0,315	0,312
LL 1222 **LL 1244** **LL 1266**	0,154	0,459	0,765	0,112	0,305	0,225 5	0,394	0,375
LL 1622 **LL 1644** **LL 1666**	0,256	0,768	1,28	0,189	0,512	0,327	0,472	0,5
LL 2022 **LL 2044** **LL 2066**	0,295	0,886	1,476	0,219	0,591	0,402	0,551	0,625
LL 2422 **LL 2444** **LL 2466**	0,413	1,24	2,067	0,308	0,827	0,577	0,709	0,75
LL 2822 **LL 2844** **LL 2866**	0,512	1,535	2,559	0,381	1,024	0,627	0,787	0,875
LL 3222 **LL 3244** **LL 3266**	0,512	1,535	2,559	0,381	1,023	0,702	0,906	1
LL 4022 **LL 4044** **LL 4066**	0,654	1,961	3,268	0,488	1,307	0,902	1,102	1,25
LL 4822 **LL 4844** **LL 4866**	0,815	2,445	4,075	0,609	1,63	1,152	1,339	1,5

Bureau of Indian Standards

BIS is a statutory institution established under the *Bureau of Indian Standards Act, 1986* to promote harmonious development of the activities of standardization, marking and quality certification of goods and attending to connected matters in the country.

Copyright

BIS has the copyright of all its publications. No part of these publications may be reproduced in any form without the prior permission in writing of BIS. This does not preclude the free use, in the course of implementing the standard, of necessary details, such as symbols and sizes, type or grade designations. Enquiries relating to copyright be addressed to the Director (Publications), BIS.

Review of Indian Standards

Amendments are issued to standards as the need arises on the basis of comments. Standards are also reviewed periodically; a standard along with amendments is reaffirmed when such review indicates that no changes are needed; if the review indicates that changes are needed, it is taken up for revision. Users of Indian Standards should ascertain that they are in possession of the latest amendments or edition by referring to the latest issue of 'BIS Handbook' and 'Standards Monthly Additions'.

This Indian Standard has been developed from Doc : No. LM 10 (0288).

Amendments Issued Since Publication

Amend No.	Date of Issue	Text Affected

BUREAU OF INDIAN STANDARDS

Headquarters:

Manak Bhavan, 9 Bahadur Shah Zafar Marg, New Delhi 110002
Telephones : 323 01 31, 323 83 75, 323 94 02

Telegrams : Manaksanstha
(Common to all offices)

Regional Offices :

		Telephone
Central	: Manak Bhavan, 9 Bahadur Shah Zafar Marg NEW DELHI 110002	323 76 17 323 38 41
Eastern	: 1/14 C. I.T. Scheme VII M, V. I. P. Road, Maniktola CALCUTTA 700054	337 84 99, 337 85 61 337 86 26, 337 91 20
Northern	: SCO 335-336, Sector 34-A, CHANDIGARH 160022	60 38 43 60 20 25
Southern	: C. I. T. Campus, IV Cross Road, MADRAS 600113	235 02 16, 235 04 42 235 15 19, 235 23 15
Western	: Manakalaya, E9 MIDC, Marol, Andheri (East) MUMBAI 400093	832 92 95, 832 78 58 832 78 91, 832 78 92

Branches : AHMADABAD. BANGALORE. BHOPAL. BHUBANESHWAR.
COIMBATORE. FARIDABAD. GHAZIABAD. GUWAHATI. HYDERABAD.
JAIPUR. KANPUR. LUCKNOW. PATNA. THIRUVANANTHAPURAM.

Printed at Printograph, New Delhi (INDIA).